Pinus ponderosa / Pascopyrum smithii Woodland

COMMON NAME	Ponderosa Pine / Western Wheatgrass Woodland
SYNONYM	Ponderosa Pine/Western Wheatgrass Woodland
PHYSIOGNOMIC CLASS	Woodland (II)
PHYSIOGNOMIC SUBCLASS	Evergreen woodland (II.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar needle-leaved evergreen woodland (II.A.4)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (II.A.4.N)
FORMATION	Rounded-crowned temperate or subpolar needle-leaved evergreen woodland (II.A.4.N.a)
ALLIANCE	*Pinus ponderosa* Woodland Alliance

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Upland

RANGE

Globally

This association is found in Wyoming and South Dakota.

Wind Cave National Park

Ponderosa pine/western wheatgrass is a very common vegetation type at Wind Cave NP. It occupies large areas in the western half of the Park and on Boland Ridge. Smaller scattered stands are found elsewhere.

ENVIRONMENTAL DESCRIPTION

Globally

This type is best developed on gentle to moderately steep slopes of all aspects except south. On northerly aspects, and in stands with greater tree cover, the more mesophytic graminoids have greater cover. Drier sites may contain a more xerophytic mix of species.

Wind Cave National Park

Ponderosa pine/western wheatgrass stands are best developed on gentle to moderately steep slopes of all aspects except south. On northerly aspects, and in stands with greater tree cover, the more mesophytic graminoids have greater cover, such as porcupine grass (*Stipa spartea*), green needlegrass (*Nassella viridula*), Canada wildrye (*Elymus canadensis*), marsh muhly (*Muhlenbergia racemosa*) and prairie dropseed (*Sporobolus heterolepis*). Western wheatgrass, little bluestem (*Schizachyrium scoparium*), sunsedge (*Carex inops* ssp. *heliophila*) and needle-and-thread (*Stipa comata*) are the common dominants on drier sites.

MOST ABUNDANT SPECIES

Globally

Stratum	Species
Tree canopy	*Pinus ponderosa*
Herbaceous	*Elymus canadensis, Nassella viridula, Pascopyrum smithii, Stipa comata*

Wind Cave National Park

Stratum	Species
Tree canopy	*Pinus ponderosa*
Herbaceous	*Elymus canadensis, Nassella viridula, Oryzopsis micrantha, Pascopyrum smithii, Stipa comata*

CHARACTERISTIC SPECIES

Globally

Pascopyrum smithii, Pinus ponderosa, Stipa comata

Wind Cave National Park

Pascopyrum smithii, Pinus ponderosa

VEGETATION DESCRIPTION

Globally

Stands are characterized by a somewhat-open canopy of *Pinus ponderosa*, with coverage in the 25 - 50% range. A subcanopy of smaller pines may be present. The shrub stratum is usually sparse, with *Amorpha canescens, Artemisia frigida, Rhus trilobata* and

Toxicodendron pubescens the most frequently found species. Herbaceous cover is typically greater than 75% and graminoid-dominated. Species composition is quite variable. On northerly aspects, and in stands with greater tree cover, the more mesophytic graminoids have greater cover, such as *Stipa spartea, Nassella viridula, Elymus canadensis, Muhlenbergia racemosa* and *Sporobolus heterolepis. Pascopyrum smithii, Schizachyrium scoparium, Carex inops* ssp. *heliophila*, and *Stipa comata* are the common dominants on drier sites. *Oryzopsis micrantha* is dominant at some sites (Marriot personal communication 1999).

Wind Cave National Park
Stands of ponderosa pine/western wheatgrass are characterized by a somewhat-open canopy of ponderosa pine (*Pinus ponderosa*), with coverage in the 25 - 50% range. A subcanopy of smaller pines may be present. The shrub stratum is usually sparse, with downy indigobush (*Amorpha canescens*), prairie sagebrush (*Artemisia frigida*), squaw-bush (*Rhus trilobata*) and poison ivy (*Toxicodendron pubescens*) the most frequently found species. Herbaceous cover is typically greater than 75% and graminoid-dominated. Species composition is quite variable. On northerly aspects, and in stands with greater tree cover, the more mesophytic graminoids have greater cover, such as porcupine grass (*Stipa spartea*), green needlegrass (*Nassella viridula*), Canada wildrye (*Elymus canadensis*), marsh muhly (*Muhlenbergia racemosa*) and prairie dropseed (*Sporobolus heterolepis*). Western wheatgrass, little bluestem (*Schizachyrium scoparium*), sunsedge (*Carex inops* ssp. *heliophila*) and needle-and-thread (*Stipa comata*) are the common dominants on drier sites. Little mountain-ricegrass (*Oryzopsis micrantha*) is dominant at some sites.

OTHER NOTEWORTHY SPECIES

CONSERVATION RANK G3

DATABASE CODE CEGL000188

MAP UNITS
The ponderosa pine/western wheatgrass community is one of the types included in map units 45 and 48, ponderosa pine woodland complex I and II, on the Wind Cave vegetation map. It is not mapped separately. Stands of dense young doghair are mapped as 49, young ponderosa pine dense cover complex. Western wheatgrass and Kentucky bluegrass types with standing dead trees and few or no living trees corresponds to map unit 13, Western wheatgrass - Kentucky bluegrass complex (with burned ponderosa pine).

COMMENTS
Wind Cave National Park
This type grades into both ponderosa pine/sunsedge and ponderosa pine/little bluestem types. Some stands are difficult to classify. Dense stands of young pine are occasionally present. These young doghair stands are mapped separately on the Wind Cave vegetation map. Grasslands with standing dead trees (usually burned) and scattered or no living trees are classified as the appropriate grassland type, but are mapped as a burned type on the Wind Cave vegetation map.

Much of Wind Cave NP is vegetated with the ponderosa pine/western wheatgrass community, and many stands were surveyed in preparing the vegetation map.

Graminoid dominance in the herbaceous stratum changes somewhat through the season with warm season grasses such as big bluestem (*Andropogon gerardii*) and prairie dropseed (*Sporobolus heterolepis*) becoming more dominant late in the season. Sunsedge (*Carex inops* ssp. *heliophila*) is more prominent early in the season.

REFERENCES
Hansen, P.L. and G.R. Hoffman. 1988. The vegetation of the Grand River/Cedar River, Sioux, and Ashland Districts of the Custer National Forest: a habitat type classification. USDA Forest Service General Technical Report RM-157, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.

Lynn, R., M. Larson, D. Hoeft, L. Todd, T. Raetz, L. Fager, and G. Barranco. No Date. Black Hills National Forest ecological land units study. USDA Forest Service, Black Hills National Forest.

MacCracken, J.G., L.E. Alexander, and D.W. Uresk. 1983. An important lichen of southeastern Montana rangelands. Journal of Range Management 36(1):35-37.